- The Muscle Physiology
- The Energy Metabolism
- The Endocrine system

Topic 3:Exercise Physiology
- The Cardiovascular System
- Physiological Responses and Adaptations to Weight Training
- Proprioception and Neuromuscular control during exercise
- Safe Prescription for Special Populations
- The safety of weight training: hemodynamic factors and cardiovascular incidents

Topic 4: Musculoskeletal injuries
- Injury Types
- Risk factors associated with Weight Training Injuries
- Types of Musculoskeletal Injuries in Weight Training
- Prevention of Injuries and Recommendations

- Tables of muscle actions
- Specific movements and muscles for each joint
- Movement-specific joints and muscles

Topic 7: Biomechanics foundations of Weight Training
- Kinematics: the description of the movement
- Kinetics: Analysis of forces
- Applications of biomechanics in weight training
- Work and muscle power
- Curves
- Classification of Weight Training exercises
- Mechanical conditions for the development of strength and hypertrophy
- Resources used in weight training
- Training machines: joint biomechanics and bodybuilding methods

Topic 8: Kinesiology and biomechanics applied to Weight Training exercises
- Applied kinesiology
- Main bodybuilding exercises

MODULE III
Topic 9: Basic nutrition
- Metabolism and energy balance
- Carbohydrates
- Proteins
- Fats
- Vitamins, minerals and water.
- Nutritional pyramid for performance
- Natural anabolic nutrition
- Basic sport nutrition
- The supplements
- The 20 best foods
- The recovery

MODULE IV
Topic 10: Training cycles and programs
- Training systems for beginners, Intermediate level and Advance level
- The perfect warm up
- Stretching
- Basic breathing and muscle relaxation techniques
- Practical training principles
- Cardiovascular training

MODULE V
Topic 11: Personalized physical activity
- Aerobic Training
- Activities that meet the demands of aerobic work
- Starting over
- Establishing a Program
- Anaerobic training
- List of exercises

MODULE VI
Topic 12: Abdominal: Anatomy and Structure
- Anatomy of the abdominal wall
- Muscles worked on abdominal exercises
- Thoracolumbar Fascia: Architecture and Structure
- Overview and Morphologic aspects of the Abdominal Muscles
- Anatomy of the Vertebral Column
- Planes and Axis of Motion of the Spine
- Anatomy of the vertebrae with emphasis on the Lumbar spine
- Joints of the Vertebral Column
- Intervertebral Disc structure and Zygapophyseal Joint Structures
- Ligaments of the Vertebral Column

Topic 13: Abdominal: Kinesiology and Biomechanics
- Kinesiology considerations about the Abdominal Exercises
- Biomechanics of the Lumbar Spine
- Application of Biomechanics on Abdominal Exercises
- Machines and devices used for Abdominal Exercises: Myths and Truth
- Abdominal Exercises for fat Loss
- Kinesiology and Biomechanics Analysis from 45 abdominal exercises
- Abdominal exercises during pregnancy
- Specific Stretch Exercises

MODULE VII
Topic 14: Organization and administration of a gym
- Procedures for the gym's day to any operations
- Check list of gym rules and policies
- Check list for staff requeriments
- Responsabilities of the staff
- The visual communication
- Guaranted of quality
- Continous improvement
- Check list for maintenance Clients file
- Check list for first-aid equipment
- Check list for overall gym preparedness
- Check list for staff preparedness
- Maintenance

Topic 15: The safety training
- Preparation of the physical structure of the weight training room
- Emergency preparedness
- Checklist for first-aid equipment

Topic 16: Questionnaires
- Physical Fitness Questionnaire
- Waist / Hip Ratio
- Risk factors
- Anthropometric evaluation
- Training program goals
- Test Par-Q & you
- Health Questionnaire
- Questionnaire for a training program

BONUS
The anti-doping in sport

11:20
bodybuilding-fitness-...
ifbb-academy.com

COURSES IFBB

MASTER BODYBUILDING AND FITNESS DEGREE

MODULE I
Topic 1: Basic concepts of the skeletal muscle system
- Structure and function of the skeletal system (bones)
- Structure and function of the articular system
- Structure and function of the muscular system
- Musculoskeletal adaptations to weight training

Topic 2: General Physiology
- The Joint system
- The Bony system

- The Muscle Physiology
- The Energy Metabolism
- The Endocrine system

Topic 3:Exercise Physiology
- The Cardiovascular System
- Physiological Responses and Adaptations to Weight Training
- Proprioception and Neuromuscular control during exercise
- Safe Prescription for Special Populations
- The safety of weight training: hemodynamic factors and cardiovascular incidents

Topic 4: Musculoskeletal injuries
- Injury Types
- Risk factors associated with Weight Training Injuries
- Types of Musculoskeletal Injuries in Weight Training
- Prevention of Injuries and Recommendations

Topic 5: Basic concepts of anthropometry
- Definition
- Body size
- Anthropometric Characteristics of the Body
- Implications of Anthropometrics in Movement Analysis

MODULE II
Topic 6: Kinesiological foundations of bodybuilding
- Muscular functions
- Classification of muscles
- Factors that affect muscle function
- Muscle Imbalances

- Tables of muscle actions
- Specific movements and muscles for each joint
- Movement-specific joints and muscles

Topic 7: Biomechanics foundations of Weight Training
- Kinematics: the description of the movement
- Kinetics: Analysis of forces
- Applications of biomechanics in weight training
- Work and muscle power
- Curves
- Classification of Weight Training exercises
- Mechanical conditions for the development of strength and hypertrophy
- Resources used in weight training
- Training machines: joint biomechanics and bodybuilding methods

Topic 8: Kinesiology and biomechanics applied to Weight Training exercises
- Applied kinesiology
- Main bodybuilding exercises

2

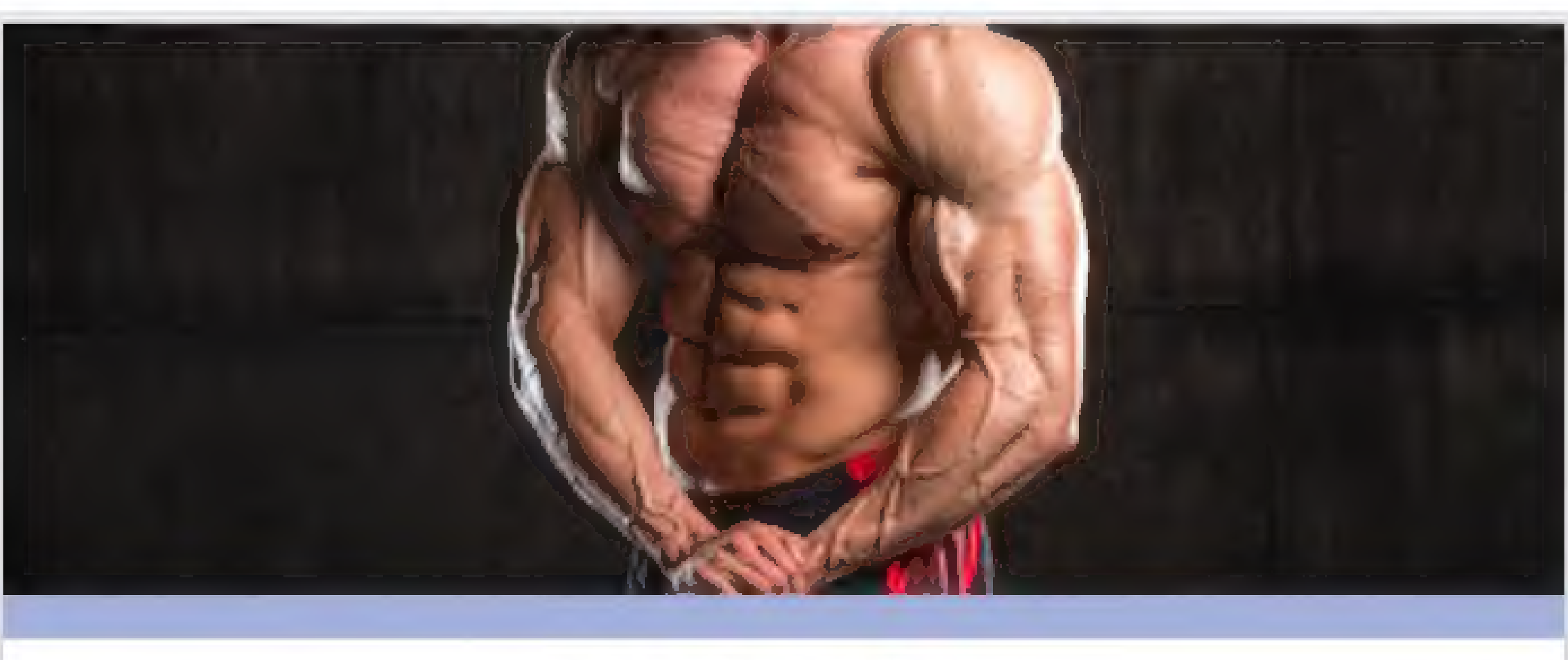
MODULE III
Topic 9: Basic nutrition
- Metabolism and energy balance
- Carbohydrates
- Proteins
- Fats
- Vitamins, minerals and water.
- Nutritional pyramid for performance
- Natural anabolic nutrition
- Basic sport nutrition
- The supplements
- The 20 best foods
- The recovery

MODULE IV
Topic 10: Training cycles and programs
- Training systems for beginners, Intermediate level and Advance level
- The perfect warm up
- Stretching
- Basic breathing and muscle relaxation techniques

Topic 13: Abdominal: Kinesiology and Biomechanics
- Kinesiology considerations about the Abdominal Exercises
- Biomechanics of the Lumbar Spine
- Application of Biomechanics on Abdominal Exercises
- Machines and devices used for Abdominal Exercises: Myths and Truth
- Abdominal Exercises for fat Loss
- Kinesiology and Biomechanics Analysis from 45 abdominal exercises
- Abdominal exercises during pregnancy
- Specific Stretch Exercises

MODULE VII
Topic 14: Organization and administration of a gym
- Procedures for the gym's day to any operations
- Check list of gym rules and policies
- Check list for staff requeriments
- Responsabilities of the staff

11:20
bodybuilding-fitness-...
ifbb-academy.com



PROF. RAFAEL SANTONJA
PROF. MAURICIO DE ARRUDA
PROF. JOSE MARIA GARCIA
PROF. NIEVES LOPEZ CILLANUEVA
ILLUSTRATIONS: ANDRES VAQUERO

COURSES IFBB

MASTER BODYBUILDING AND FITNESS DEGREE

MODULE I
Topic 1: Basic concepts of the skeletal muscle system
- Structure and function of the skeletal system (bones)
- Structure and function of the articular system
- Structure and function of the muscular system
- Musculoskeletal adaptations to weight training

Topic 2: General Physiology
- The Joint system
- The Bony system
- The Muscle Physiology
- The Energy Metabolism
- The Endocrine system

Topic 3:Exercise Physiology
- The Cardiovascular System
- Physiological Responses and Adaptations to Weight Training
- Proprioception and Neuromuscular control during exercise
- Safe Prescription for Special Populations
- The safety of weight training: hemodynamic factors and cardiovascular incidents

Topic 4: Musculoskeletal injuries
- Injury Types
- Risk factors associated with Weight Training Injuries
- Types of Musculoskeletal Injuries in Weight Training
- Prevention of Injuries and Recommendations

Topic 5: Basic concepts of anthropometry
- Definition
- Body size
- Anthropometric Characteristics of the Body
- Implications of Anthropometrics in Movement Analysis

MODULE II
Topic 6: Kinesiological foundations of bodybuilding
- Muscular functions
- Classification of muscles
- Factors that affect muscle function
- Muscle Imbalances
- Tables of muscle actions
- Specific movements and muscles for each joint
- Movement-specific joints and muscles

Topic 7: Biomechanics foundations of Weight Training
- Kinematics: the description of the movement
- Kinetics: Analysis of forces
- Applications of biomechanics in weight training
- Work and muscle power
- Curves
- Classification of Weight Training exercises
- Mechanical conditions for the development of strength and hypertrophy
- Resources used in weight training
- Training machines: joint biomechanics and bodybuilding methods

Topic 8: Kinesiology and biomechanics applied to Weight Training exercises
- Applied kinesiology
- Main bodybuilding exercises

2